



ERIC WHITACRE'S  
**VIRTUAL SCHOOL**

## CHAPTER 8: VOICING

*Building tuning and shimmering at the structural level*

### Student Guide – Curiosity Edition



### Introduction

This video will help you gain some insight into Eric's approach for writing voice parts in a musical composition. You will explore ideas that will help you understand how voices can create musical clusters with simple formulas, and you will learn to listen for overtones.

In Chapter 8, Eric demonstrates the effect of voicing the chords used in the piece and the ways a composer can create voice leading that allows non-professional singers to easily sing complex clusters. He discusses how the overtone series, the placement of the text and choice of the vowel strengthens intonation.

Works referenced in this video:

- *Go, Lovely Rose*: [https://youtu.be/X7Uv9Ke0\\_vk](https://youtu.be/X7Uv9Ke0_vk)
- *Sainte-Chapelle*: [https://youtu.be/vA\\_dBlc33JE](https://youtu.be/vA_dBlc33JE)

## Words and ideas to help you stay curious

Fundamental Frequency  
Overtone series  
Vowels and overtone clusters  
*Sainte-Chapelle*

## Discussion, Discovery and Insight

Think about how buildings are designed. Many buildings are bigger on the bottom and smaller on the top. Why do you think this is? How do you think this can be applied to music?

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The overtone series in music has bigger spaces between notes on the bottom (lower frequencies) and smaller spaces between notes the top (higher frequencies). Have you ever heard of the overtone series before? What do you know about it? How is this like a tall building and why do you think the overtone series can make music sound more stable and interesting?

## Building tuning and shimmering at the structural level

1. Watch this video about the overtone series: <https://youtu.be/OATjHiOuc70>.

Did you know about the overtone series before you saw this video, or the video by Eric Whitacre? Why is this naturally occurring phenomenon an important part of the experience of music?

2. If you have access to an acoustic piano (not an electronic piano) then try this experiment. Play and hold down one of the piano keys toward the bottom (left) of the keyboard. Listen to the sound of the string as it vibrates. Listen for and explore the sound it creates. Next, hold down the sustain pedal (the pedal to the right on most pianos) and then strike the same key again and hold it down as you did before. Do you hear a slightly different sound? If so, you will probably be hearing other higher strings on the piano vibrating because of the low one. Can you pick out the notes of the strings that you hear? It is because of the overtone series that these other higher strings tend to vibrate with the lower one. Try playing different notes using the same approach. Do you hear similar patterns of sounds? Describe your experience.

3. Do a curiosity experiment with vowels and overtone clusters: Sing the song *Happy Birthday to You* with three other people who are curious and can sing the song pretty close to in tune. Have each person start the song together in unison but with different people stopping on different words and holding them to the end of the song. For example:

- PERSON 1 sings “Happy Birthday.....” and holds the note for “day” until the end of the song.
- PERSON 2 sings “Happy Birthday to you” and holds the note for “you” until the end of the song.
- PERSON 3 sings “Happy Birthday to you, happy birth” and holds the note for “birth” until the end of the song.
- PERSON 4 sings “Happy Birthday to you, happy birthday to” and holds the note for “to” until the end of the song.

Listen for the cluster of notes you create when you do this experiment. On this song we are singing the cluster with three different vowel sounds: oo (to, you), ur (birth) and ay (day). Listen how it sounds to have these three vowels sung together. For fun, try having every voice end on the same word sound (vowel) when you hold the notes. The easiest way to do this is to do the experiment as outlined above, and then have everyone change to a certain word on their note together at the very end. It’s likely that you will need to take a quick breath and come back in on your note. Try these words and see what the cluster sounds like on each of these words: ah (mom), eh (set), ee (see), oh (home), oo (soon).

For more fun try stopping on different words or singing another song and doing the same experiment. What kinds of cool clusters can you create? If you don’t prefer to sing, try creating some clusters on the piano or on some other instrument or software program that can create sustained pitches.

## Reflection and Insights

Did you find it easy to hear and describe overtones in music? Why, or why not? Describe your thinking. What could you do to hear overtones better?

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Eric says he composes and voices his music with bigger intervals on the bottom, just like the overtone series. Why do you think this makes his music sound more stable, like a tall building with a big foundation?

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Did you enjoy creating vowel clusters? Explain your experience and your relative success with the activity.

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Would you change this activity to better suit your learning style and interests? If so, describe how you would change it and why the adjustments would be better for you.

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